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THE AMERICAN CHEMICAL SOCIETY.

XXV.—Proceedings.

Regular Meeting, September 4, 1879.

The meeting was called to order by the Secretary, and on motion, Dr. Endemann took the chair. The minutes of the previous meeting were read and adopted. The following gentlemen were proposed for membership:

Dr. Giesecke, proposed by Mr. Nichols, seconded by Messrs. Endemann and Bourgougnon; C. Tessié du Motay, proposed by Mr. Bourgougnon, seconded by Messrs. Casamajor and Rossi; Mr. Thomas Harmer, proposed by Dr. Endemann, seconded by Messrs. Nichols and Goldschmidt.

The Secretary called upon the Chair to name a committee of three to prepare a list of officers for the ensuing year, to be voted for at the next December meeting. The Chairman then called the attention to the objections raised to the plan heretofore adopted by the Society for the nomination of its officers.

Dr. Alsberg spoke of the difficulties experienced by him while Secretary. Dr. Goldschmidt proposed the Hassard plan of requesting the members to make the nominations for officers, the two names receiving the highest number of votes to receive the nominations, and to be voted on at the December meeting. Mr. Casamajor moved that the chairman appoint a committee of three to report at the October meeting a plan for the nomination of officers for the ensuing year. The chair appointed as such committee Messrs. Squibb, Casamajor and Alsberg.

The Treasurer stated that at the next meeting of the Society he should move that the dues of the resident members should be increased to ten dollars per annum.

The Secretary announced the death of Mr. F. A. Cairns.

The paper of the evening, "Analyses of Air," by Wm. Van Slooten, was then read by the Secretary. A paper on "A New Sulphur Compound of Urea," by J. H. Stebbins, Jr., was announced for the next meeting. Dr. Endemann gave a brief ab-

stract of Meyer's paper on "The Dissociation of Chlorine at High Temperatures," read before the German Chemical Society, after which the Society adjourned.

S. A. GOLDSCHMIDT,
Recording Secretary.

Abstracts from Foreign and American Journals.

Bulletin de la Société Chimique de Paris.

Abstractor, E. H. S. BAILEY, PH. B.

Vol. XXXI., No. 7, April 5, 1879.

A Discussion of the Hydrocarbons Obtained from American Petroleum, L. PRUNIER.—The details of these experiments are given in Bull. Soc. Chim., **31**, 158. A resumé of the works is included in this article, with special mention of new hydrocarbons, which have a very high percentage of carbon.

On Iodide of Potassic Iodide, A. GUYARD.—This substance, which is made by dissolving 3 parts of iodine in an aqueous solution containing 4 parts of iodide of potassium, is not a simple solution, but a chemical compound, KI_3. That this is the case, is abundantly proved by precipitation with metallic salts. Biniodide of potassium may be used as a test for methyl alcohol, for if added to a slightly alkaline solution of this alcohol, it produces an abundant precipitate of iodoform, while with ethyl alcohol none is produced.

On the Action of Oxalic Acid Upon Chlorates, Bromates and Iodates, A. GUYARD.—If a mixture of chlorates, bromates and iodates, be treated with a boiling saturated solution of oxalic acid, chlorates are first decomposed, chlorine being set free; then bromates, with separation of bromine; then iodates, with separation of iodine. One is completely decomposed before the next is attacked; it is advisable to add a little oxalic acid at the time, to bring about gradual decomposition. It is proposed to apply these important reactions to the commercial separation of these elements.

On a Process for the Separation and Determination of Chlorine, Bromine and Iodine, A. GUYARD.—Noticed elsewhere.

On the Decomposition of Hydracids by Metals, M. BERTHELOT.—If we examine the list of metals classified according to their

"heat of formation,"* it will be noticed that this classification does not accord with the older classification, in which the metals were arranged in order of the facility with which they decompose water and acids with disengagement of hydrogen. From this list it is inferred, that the "heat of formation" of hydrochloric acid, is exceeded by that of the chlorides of lead, copper, mercury and silver. Hence, hydrochloric acid gas ought to be decomposed by all these metals. Lead readily decomposes it; mercury does the same in a sealed tube at 400°, but a dissociation takes place. Copper and silver decompose it under certain conditions. Sulphides, bromides and iodides still further confirm the theory.

On the Reciprocal Displacements between Oxygen, Sulphur, and the Halogens combined with Hydrogen, BERTHELOT.—The mutual replacements between oxygen, chlorine, bromine and iodine, united either to metals or metalloids, are regulated by their heat of combination. From an accompanying table it is noted that:

I. Chlorine should displace bromine and iodine, and bromine should displace iodine.

II. Chlorine and bromine should displace sulphur in H_2S.

III. Iodine should displace sulphur in H_2S in solution, but sulphur should decompose gaseous hydroiodic acid.

IV. Oxygen should displace sulphur in H_2S.

V. The thermic theory indicates that an equilibrium ought to exist between chlorine and oxygen.

VI. Oxygen should displace bromine in hydrobromic acid.

VII. Oxygen should displace iodine in hydroiodic acid.

Experiments completely confirm the theory with actual facts.

Idem, No. 8.

Preparation of Malonic Acid, E. GRIMAUX and J. TSCHERNIAC.—Cyanacetic acid is first obtained by dissolving 250 gms of chloracetic acid in 500 gms of water, and saturating the solution with anhydrous carbonate of soda; to this solution is added a hot solution of 200 gms cyanide of potassium in 200 gms of water, and after cooling, this is saturated with sulphuric acid. Ether is then added, and the solution, distilled on a water bath, leaves a syruppy residue of cyanacetic acid. To convert this into a malonic acid, it is treated on a water bath in a flask with hydrochloric acid, a suitable

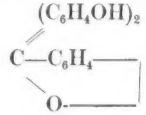
* Annuaire du Bureau des Longitudes, pour 1879, p. 540.

condensor being provided, and a current of dry hydrochloric acid gas being run into the flask. The contents of the flask, after being distilled to dryness, are dissolved in ether, and the ethereal solution, distilled, leaves crystals of malonic acid. By this process 34 per cent. is obtained from the quantity originally taken.

On the Formation of Aurine, PH. DE CLERMONT and J. FROMMEL.—Aurine is made by the authors in accordance with the following equation :

$$CO_2 + 3C_6H_5OH = 2H_2O + C_{19}H_{14}O_3.$$

Experiments made, proved that neither carbonic oxide nor carbonic anhydride enter into this combination directly. It was, however, proved that nascent CO_2, from CO and O, furnished a large quantity of aurine, and the following expanded formula was assigned to it :



On the Role of Auxiliary Acids in Etherification, BERTHELOT.—This article, which is not suitable for abstraction, consists of a discussion, both from a chemical and a thermic point of view, of the action of sulphuric, hydrochloric and nitric acids, in bringing about the formation of ethers.

On Certain Catalytic Phenomena caused by Viscosity, A. GUYARD.—Viscosity, like porosity, modifies certain chemical reactions. That this is true, is proved especially when glycerine is added to solutions of salts of the metals. It prevents the precipitation of chromium from a solution of chloride of sesquioxide, by ammonia ; and of ferric hydrate, by the same reagent. In some cases, the addition of a small quantity of acid, not enough to neutralize the alkali, will induce the ordinary reaction. Frequently the same result is reached by dilution with water. A great variety of reactions may be mentioned, whose anomaly can only be explained on the supposition that they are produced by viscosity. There is, then, a very close connection between this physical property and chemical forces. Unsuccessful attempts have been made to apply these facts to chemical analysis.

Idem, No. 9.

On the Combinations of Hydrogen Phosphide with Cuprous Chloride, and its Determination in Gaseous Mixtures, J. RIBAN.—Hydrogen phosphide combines with cuprous chloride, dis-

solved in hydrochloric acid, forming several compounds, one of which is of definite composition, and well crystallized. This is made by passing hydrogen phosphide gas (made by heating phosphorus with milk of lime, and subsequently washing with hydrochloric acid), into an artificially cooled solution of cuprous chloride. Long, colorless needles are formed, which correspond to the formula $\left.\begin{matrix} Cu_2'' \\ H_6 \end{matrix}\right\} P_2Cl_2$. This is called chloride of cuproso-diphosphonium. An excess of hydrogen phosphide passed into the solution of cuprous chloride, as above, causes the precipitate, at first formed, to dissolve. This solution of hydrogen phosphide gas in cuprous chloride, is recommended as a convenient source of this gas. It may at any time be set free, by heating and washing the gas to remove hydrochloric acid. This gas is not inflammable, but it is advisable to fill the apparatus with CO_2, or hydrogen gas, before performing the experiment. This fact of absorption of hydrogen phosphide, is utilized by the elaboration of a method by which this gas can be quantitatively determined with great accuracy.

Bromide of Tetrallylammonium and Triallylamine, H. GROSHEINTZ.—Bromide of tetrallylammonium can be prepared in a large quantity, in a comparatively short time, by passing a current of ammonia gas into an alcoholic solution of bromide of allyl. The crystalline mass that is soon deposited, may be purified by solution in absolute ethereal alcohol and subsequent evaporation. Triallylamine may be readily prepared, by distilling rapidly, in the presence of a large excess of recently melted potash, the crude bromide of tetrallylammonium obtained above. The distillate separates, into two layers, the upper being triallylamine, and the lower, a saturated aqueous solution of the same. Triallylamine, thus prepared, is an oily liquid, lighter than water, very alkaline, and possessing a very disagreeable, penetrating odor.

On a New Ferment of Urea, P. MIQUEL.—New evidence of the presence of the *torula ammoniacale* in the air, has been collected since the publication of the last paper.* The author has discovered in sewage, another organism which also has the power of changing urea into carbonate of ammonia. This *bacillus* has nearly the same physiological function as the microscopical organism above-mentioned.

* Bull. Soc. Chim., **29**, 387.

Idem, No. 10.

Note on an Ammoniacal Oxyferrocyanide of Copper, A. GUYARD.—Ammoniacal sulphate of copper is precipitated by ferrocyanide of potassium, and this precipitate, after being washed, is spread upon a porcelain plate, and heated. Between 150° and 170° it loses cyanogen and ammonia, and absorbs oyxgen, acquiring a rich violet color. This ammoniacal oxyferrocyanide of copper, heated to 200°, suffers another change, forming another oxyferrocyanide, more highly oxidized than the first. At 250° it undergoes still another change, and becomes green. These bodies are quite stable, and attempts have been made to apply them to practical use in dyeing, but thus far without success.

On a Special Law Applicable to Metallic Ferrocyanides, A. GUYARD.—Those metallic hydrates that form soluble salts, can be divided into two groups with reference to ammonic hydrate:

I. Those oxides soluble in ammonia or the ammoniacal ammonia salts, and, hence, soluble in ammoniacal ammonic tartrate, and in which ferrocyanide of potassium produces a precipitate.

II. Those oxides insoluble, or very slightly soluble, in ammoniacal ammonia salts, but, on the contrary, soluble in ammoniacal ammonic tartrate.

In the latter, the ferrocyanides are perfectly soluble in ammoniacal tartrate of ammonia. The elements are arranged in a table according to this law.

Idem, No. 11.

On the Action of Ammonia Salts upon Some Metallic Sulphides, and the Application of these Facts to Analysis, PH. DE CLERMONT.—Sulphides of bismuth, cadmium, copper or platinum, are not changed by being boiled with a solution of an ammoniacal salt. Mono and bisulphide of mercury are not changed. Trisulphide of antimony is completely decomposed into volatile sulphide of ammonia and chloride of antimony. Bisulphide of tin changes to stannic acid. Monosulphide of tin reacts in a similar manner, being changed into protoxide. Those metals which, in an acid solution, are not precipitated by hydrogen sulphide, but which ammonic sulphhydrate changes either into sulphides or insoluble oxides, are especially acted upon by ammoniacal salts. Sulphide of manganese changes to soluble chloride; sulphide of iron to protochloride. Sulphides of nickel and cobalt change slowly to chlorides; sulphide of zinc resists still more the action of chloride of ammonium, but is dissolved by

prolonged boiling. It is a well-known fact, that alumina and oxide of chromium, precipitated by ammonic sulphhydrate, are insoluble in ammonia salts. From these facts, a method of separation of these metals has been devised.

Observations on Sulphurous Baths, PH. DE CLERMONT and J. FROMMEL.—It is possible, according to recent observations, that the efficacy of some mineral springs may be, to a certain extent, proportional to the electric currents developed in them. Monosulphides produce stronger currents than polysulphides. Some physicians have had better success by substituting the former for the latter. Experiments proved that the quantity of hydrogen sulphide disengaged by the polysulphides, was, to that disengaged by the protosulphides, as 2 to 1. The polysulphide being less efficacious, from a medical point of view, and its electro-motive force being less, it is reasonable to conclude that the quantity of hydrogen sulphide that a water contains, is not proportional either to its therapeutic action, or to the intensity of the electric current.

On Scandium, P. T. CLEVE.—The mineral gadolinite contains only a very small quantity, probably not over 0.02 per cent. of oxide of scandium. Keilhanite contains about 0.04 per cent. of the oxide.

Idem, No. 12.

Preparation of Methyl Formic Ether and Pure Methyl Alcohol, CH. BARDY and L. BORDET.—The method described yields methyl formic ether in large quantities, and is comparatively easy of execution. Into a flask containing formate of soda, dried at 130–140°, is poured, agitating briskly, a mixture of methyl alcohol and aqueous hydrochloric acid ; the three bodies being in about equivalent proportions, with slight excess of methyl alcohol. After distillation, the distillate is treated with carbonate of soda, and rectified several times. The formate of methyl thus formed is perfectly pure, and boils at 32°. Pure methyl alcohol can be made from this, by distilling with caustic soda, with certain precautions. The formate of soda, which remains after distillation, can be used for a second purification of methyl alcohol. Lime may replace soda in the above operations.

Pseudo-uric Acid, E. GRIMAUX.—Equal parts of uranile and urea are heated for some hours to 180° ; the mixture is treated with boiling water, and upon cooling, pseudo-urate of ammonia separates. To these crystals, dissolved in soda, carbonic anhydride is added, which gives a precipitate of pseudo-urate of sodium. Hydrochloric acid

produces in the aqueous solution of this salt, a white precipitate of pseudo-uric acid ($C_5H_6N_4O_4$). If pseudo-uric acid is treated with sulphuric acid at 150°, the molecule is decomposed into ammonic sulphate, carbonic anhydride, and a yellow substance, proved to be xanthinine. This reaction takes place in accordance with the reaction :

$$C_5H_6N_4O_4 + H_2SO_4 = C_4H_3N_3O_2 + CO_2 + SO_4HNH_4.$$

On a New Method of Making Glycocol by Means of Nitracetic Ether, DE FORCHAND.—Bromacetic ether is acted upon by nitrate of silver, as follows :

$$C_4H_4(C_4H_2[HBr]O_4) + AgNO_4 = AgBr + C_4H_4(C_4H_2[NO_4H]O_4).$$

The nitracetic ether is then separated by fractional distillation, and purified. The product is reduced with hydrochloric acid and tin, and the tin precepitated with hydrogen sulphide. From the filtrate, chlorhydrate of glycocol separates out. The reaction is :

$$C_4H_4(C_4H_2[NO_4H]O_4) + 3H_2 = C_4H_4(C_4H_2[NH_3]O_4) + 2H_2O_2.$$

Chlorhydrate of glycocol is treated with moist oxide of silver, and the crystals of glycocollate of silver obtained after filtration and dessication, are dissolved and treated with hydrogen sulphide, thus setting the glycocol free.

On the Action of Ethylene upon Benzine in the Presence of Chloride of Aluminum, M. BALSOHN.—By the long continued action of benzine on ethylene and chloride of aluminum, and fractional distillation, the bodies obtained were ethyl benzine, boiling at 135–137° ; diethyl benzine, boiling at 179–185°; and triethyl benzine, boiling at 214–218°. Bodies having a still higher boiling point are also produced in small quantities.

On the Active Principle of Insect Powder, G. DAL SIE.—The author has paid special attention to pyrethrum, from Dalmatia, and has determined the active principle to be an acid, supposed to exist free, as it can be easily volatilized. It contains also an oily acid, having an aromatic odor, and a resinous substance similar to a glucoside.

American Journal of Science and Arts, Vol. XVII.

Abstractor, J. P. BATTERSHALL, PH. D.

No. 97.

On the Electrolytic Estimation of Cadmium, EDGAR F. SMITH.—Noticed elsewhere.

No. 99.

On the Chemical Composition of Triphylite, SAMUEL L. PENFIELD.—In this paper, analyses of triphylite from Norwich, Mass., and from Bodenmais, Bavaria, as well as of the allied lithophilite, from Branchville, Conn., are given.

Triphylite:

I. Bodenmais—color, light blue; sp. gr., 3.549.

II. Norwich—color, greyish-green; sp. gr., 3.534.

III. Grafton.*

Lithophilite:

IV. Branchville—color, light brown; sp. gr., 3.482.

	I.	II.	III.	IV.
P_2O_4	43.18	44.76	44.03	45.22
FeO	36.21	26.40	26.23	13.01
MnO	8.96	17.84	18.21	32.02
CaO	.10	.24	.94	——
MgO	.83	.47	.59	——
Li_2O	8.15	9.36	8.79	9.26
K_2O	——	——	.32	——
Na_2O	.26	.35	.12	.29
H_2O	.87	.42	1.47	.17
Gangue	.83	——	——	.29
	99.39	99.84	100.70	100.20

These analyses give for triphylite the formula $LiFePO_4$, and for lithiophilite the formula $LiMnPO_4$.

No. 100.

On the Presence of Chlorine in Scapolites, FRANK D. ADAMS.—The author has examined a large number of scapolites from various localities, and finds the same to contain chlorine, a fact which seems to have been hitherto overlooked by mineralogists. The amount

* See Am. Journ. Sc., 3, 13, 426.

ranged from 0.2026 to 2.411 per cent. The chlorine was determined by fusion with sodic carbonate, and also by Rose's method, which consists in decomposing the mineral in the cold, by hydrofluoric acid in the presence of weak nitric acid, filtering off the calcium fluoride, and precipitating with silver nitrate.

No. 101.

On the Mineral Locality in Fairfield County, Connecticut, with the Description of Two Additional New Species, GEORGE S. BRUSH and EDWARD S. DANA.

Fairfieldite usually occurs in massive crystalline aggregates. Hardness, 3.5; sp. gr., 3.15; color, white to straw-yellow. The crystals belong to the triclinic system. It is soluble in nitric and hydrochloric acids.

Fillamite occurs in granular crystalline masses. Hardness, 4.5; sp. gr., 3.41; color, wax-yellow; crystalline form, monoclinic; soluble in nitric and hydrochloric acids.

The authors refer to several new species previously described,* and assign to them and those mentioned in this paper the following formulæ:

Easphorite, $AlP_2O_8 + H_2Mn(Fe)O_2 + 2\ Aq$; orthorhombic.
Triploidite, $Mn_3(Fe_3)P_2O_8 + Mn(Fe)(OH)_2$; monoclinic.
Dickinsonite, $4(MnFeCaNa_2)_3P_2O_8 + 3\ Aq$; monoclinic.
Lithiophilite, $Le_3PO_4 + Mn_3P_2O_8$; orthorhombic.
Reddingite, $Mn_3(Fe_3)P_2O_8 + 3\ Aq$; orthorhombic.
Fairfieldite, $Ca_3(Mn_3Fe_3)P_2O_8 + 2\ Aq$; triclinic.
Fillamite, $3(MnFeCaNa_2)_3PrO_8 + Aq$; monoclinic.

The Relations of the Volumes of Solutions of Hydrated Salts to their Water of Composition, RICHMOND I. SOUTHWORTH.—The object of the author's experiments was to test the theorem: *If a hydrated salt be dissolved in a given volume of water, the volume of the solution will exceed the original volume of water by a bulk equal to the bulk of saline water contained in the salt dissolved.* The weight in grams of the salt used, that contained one cubic centimeter of water in its composition, was first determined by dividing the atomic weight of the salt by the atomic weight of its saline water—the term *saline water* being used to signify all the molecules of water contained in the salt, whether combined as bases or as water of crystallization. The quantity of salt thus determined to contain 1 cc of water, was then dissolved in 90 cc of water in a

* Am. Journ. Sc., July and August, 1878.

graduated 100-cc tube, and notice taken of the increase of volume produced. The author's experiments, which embraced a large number of salts, agree well with the above theorem.

Analysis of the Tetrahedrite from Huallanca, Peru, W. J. COMSTOCK.

S	= 26.74
Sb	= 9.06
As	= 13.49
Ag	= 3.86
Cu	= 39.09
Fe	= 5.46
Zn	= 2.14
	99.84

Berichte der deutschen chemischen Gesellschaft.

Abstractor, Prof. P. TOWNSEND AUSTEN, Ph. D., F. C. S.

On the Formation of Sulphonic Acids from Sulphones, R. OTTO (**12**, 214).—Equal molecules of sulphobenzid and monochlorsulphuryl, heated at 120°, give a *sulphobenzid-monosulphonic acid:*

$$C_6H_5SO_2C_6H_5 + SO_2OHCl = HCl + C_6H_5SO_2C_6H_4SO_2OH.$$

In the same manner, 1 mol of sulphobenzid and 2 mols of monochlorsulphuryl give *sulphobenzid-disulphonic acid:*

$$C_6H_5SO_2C_6H_5 + ClSO_2OH = C_6H_5SO_2C_6H_3(SO_2OH)_2 + HCl.$$

With three molecules no *trisulphonic* acid was formed.

On the Production of Hydrogen Sulphide in Chemico-Legal Examinations, ROBERT OTTO (**12**, 215).—If either the acid or the iron sulphide contains the slightest trace of arsenic, hydrogen arsenide will be formed, which can be detected by the Marsh test. The use of calcium sulphide or barium sulphide (Mohr) is recommended. Several other interesting points are mentioned.

On the Action of Iodine on Aromatic Compounds with long Side-chains, R. PREIS and B. RAYMANN (**12**, 219).—Various kinds of turpentine oil have been observed to yield cymole with iodine. Authors acted on an oil, which had not been examined in this direction, with iodine in a closed tube, at a high temperature. The results were, a combustible gas probably of the methan series, hydrocarbons, distilling at 155–165° and 180–220°, a small amount of toluole (?),

xylole, mesitylene, pseudocumole, and small amounts of two unknown substances. The 155–167° distillate yielded no benzoic acid on oxidation, proving the absence of propyl benzoles.

Contributions to our Knowledge of Cholesterine, R. PREIS and B. RAYMANN (**12,** 224).—Cholesterine, on careful nitrition, yielded *dinitro-cholesterine.* Fine, colorless needles, fusing at 120–121°.

Cholesteryl chloride gave colorless needles of *mononitro-cholesteryl chloride,* fusing at 148–149°.

On Some Azo Compounds, P. WEZELSKY and R. BENEDEKT (**12,** 226).

Azobenzole-phloroglucine.—Prepared by mixing very dilute solutions of 1 mol phloroglucine, 2 mols aniline nitrate and 2 mols potassium nitrite; crystallizes from alcohol in microscopic leaflets of a golden brown color. Soluble in conc. H_2SO_4 to a ruby-red. Formula is:

$$\left.\begin{matrix} C_6H_5—N=N \\ C_6H_5—N=N \end{matrix}\right\rangle C_6H(OH)_3$$

Para-azotoltuole-phloroglucine.—Prepared in an analogous manner. Long, fine needles, soluble in conc. H_2SO_4 to a carmine-red. It possesses a strong coloring power for wool and silk, imparting pure shades from yellow to cinnabar.

Para-azophenole-phloroglucine.—Para-diazophenole and phloroglucine yield two compounds of the above type; one being soluble, the other insoluble, in alcohol. (1.) Red crystalline powder, soluble in conc. H_2SO_4 and alkalies, to a dark orange-red. (2.) Green metallic amorphous mass. Formula:

$$HO—C_6H_4—N=N—C_6H_2(OH)_3.$$

By mixing dilute alcohol solutions of the diazo sulphates and naphthylamine, the following bodies were obtained:

Azobenzole-naphthylamine sulphate, $2(C_6H_5—N=N—C_{10}H_6NH_2)H_2SO_4+4H_2O$. Microscopic, satiny black needles, giving a carmine-red alcoholic solution. Alkalies precipitate the base.

Para-azotoluole-naphthylamine.—Ruby-red crystals, fusing at 145°. The *sulphate* forms steel-blue needles, turning green on drying.

Para-azophenole-naphthylamine.—$HOC_6H_4—N=N—C_{10}H_6NH_2+3H_2O$. Bunched needles of an orange color, fusing at 170°. The *sulphate* forms green needles, giving a blue alcoholic solution.

Oxidation-Products of Quinine, Zd. H. Skrauss (**12**, 230).—Author finds that the formula of cinchonic acid is $C_{10}H_7NO_2$, and not $C_{12}O_{14}N_2O_4$, as given by Weidel. It fuses at 256°, and gives an HCl salt, which decomposes on drying in a vacuum. Caventon and Willm's carboxycinchonic acid he finds to be cinchonic acid. By oxidation with a chromic mixture, cinchonic, cinchonidine, cinchotenine and cinchotenidine, yielded cinchonic acid.

(Continued.)

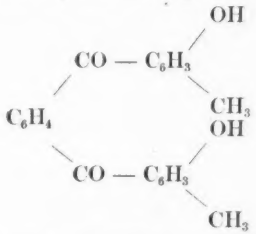
Abstractor, James H. Stebbins, Jr., S. B.

Contributions to History of Ultramarine, E. W. Buechner (**12**, 234).

On the Constitution of Phenanthrene, G. Schultz (**12**, 235).

On the Phthaleine of Orthokresole, George Fraude (**12**, 237).—The author obtained this compound by heating for eight or ten hours to 120°, 2 parts of kresole (from orthotoluidine), 3 parts of phthalic anhydride, and 2 parts of tin tetrachloride.

He thus obtains a compound having the following formula:



By the action of acetic anhydride, benzoyl chloride and bromine, on the above compound, he obtained bodies containing the acetyl radical, &c.

Contribution to the History of Glyoxyl Acid, C. Bottinger (**12**, 244).

On the Components of the Essential Oils of some Ericeae, H. Koehler (**12**, 246).

On the Heat evolved by Mixing Anhydrous Sulphate of Soda with Water, L. C. de Coppet (**12**, 248).

On the Specific Rotary Power of Isocholesterine, E. Schultz (**12**, 249).

On the Determination of the Specific Gravity of Powdered Bodies, Fr. Ruedorff (**12**, 249).

Contributions to the History of Methylcrotonic and Angelicic Acids, E. SCHMIDT (**12**, 252).

On the Azo Derivatives of Diphenylamine and Diphenylnitrosamine, OTTO N. WITT (**12**, 258).

Tropaeoline Y. is the acid soda salt of oxyazobenzole-sulphonic acid:

$$NaSO_3C_6H_4N = NC_6H_4OH.$$

Tropaeoline O. is the acid soda salt of metadioxyazobenzol:

$$NaSO_3C_6H_4N = NC_6H_4OH.$$

Tropaeoline OO. is the potassic salt of phenylamidoazobenzole-sulphonic acid:

$$NaSO_3C_6H_4N = NC_6H_4NHC_6H_5.$$

Tropaeoline OOO. No. 1, is oxynaphthylazophenyl-sulphonic acid:

$$HSO_3C_6H_4N = NC_{10}H_6OH.$$

Tropaeoline OOO. No. 2, is the corresponding soda salt of β naphthole.

$$NaSO_3C_6H_4N = NC_{10}H_6OH.$$

Tropaeoline OOOO. is an isomer of the two last ones, and is obtained by the action of diazobenzole on naphthole-sulphonic acid under peculiar circumstances.

The author calls all orange and orange-red colors (formed by affixing the sulpho group [HSO_3] to the amido, or oxyazo bodies), tropaeolines..

These colors are distinguished in commerce, according to their shade, by using the letters Y for yellow, and O for orange.

The prettiest of all these dyes, is tropaeoline OO., which dyes silk and wool of a fine golden-yellow color; it contains all the basic properties of amidoazobenzole, permitting it to be used with dilute acids.

The starting point of this body is phenylamidoazobenzole, which is prepared as follows:

17 gms of diphenylamine are dissolved in 100 cc of alcohol. This solution is then cooled off to 0°, and then is added 14 gms of diazobenzole chloride, in 50 cc of alcohol. The mixture thus obtained is cooled off, and then an alcoholic solution of trimethylamine is added.

This mixture is then poured in water, which precipitates the phenylamidoazobenzole, in the shape of a dark brown oil. The formula of this substance would be:

$$C_6H_5 - NH - C_6H_4 - N = N - C_6H_5.$$

If this be treated with amylnitrite and acids, it goes over into the corresponding nitrosamine, which has, as formula:

$$C_6H_5 - NNO - C_6H_4N = N - C_6H_5.$$

If diphenylamine be acted on by the sulpho-acid of diazobenzole, instead of diazobenzole, we would obtain tropaeoline OO.

If tropaeoline be reduced, sulphanilic acid and amidodiphenylamine are formed.

The author is still studying this reaction, and promises to publish the results of his experiments on some future occasion.

A new universal Stand for using the Pocket Spectroscope, T. v. LEPEL (**12**, 263).

In regard to the Chemistry of Chondrine, R. PETRI (**12**, 267).

On the Direct Combination of various Metal Groups with Benzole or Toluole, H. H. FRIEDEL and CRAFTS (**12**, 289).—These chemists had formerly performed several syntheses by means of metal chlorides, especially with the aid of aluminum chloride (Bull. Soc. Chim., **29**, Nos. I and II).

They obtained thus, by the action of chloride of cyanogen on benzole, a mixture of organic acids, mainly benzoic and phthalic acids:

$$CNCl + C_6H_6 = HCl + C_6H_5CN,$$

also by the action of methyl chloride on benzole, durole or tetramethyl benzole (Bull. Soc. Chim., (**29**, 50).

MR. CHAS. GIRARD (**12**, 290).—(Bull. Soc. Chim., **29**, 50.) This chemist obtained, by the action of baric hydrate on violaniline, a mixture of ammonia and rosolic acid. The sulpho-acid of roseaniline blue yields ammonia and rosolic acid; methyl blue yields methylaniline and rosolic acid; lastly, sulphanilic acid yields pyrocatechine.

Preparation of Divaleryl, T. W. BRUEHL (**12**, 315).

On the Succinyl Compounds of Toluidine, G. v. BECHI (**12**, 320).—The author obtained several new bodies by the action of succinic acid on the toluidines, either ortho, meta or para.

Action of Dehydrating Bodies on Camphoric Acid and its Amide, M. BALLO (**12**, 324).

On the Hydrocarbons Obtained by the action of Methyl Chloride, in combination with Aluminium Chloride, E. ADOR and A. RILLIET (**12**, 329).

Trimethylbenzole.—Obtained by the action of methyl chloride and aluminium chloride on toluole, and separating the liquids by fractional distillation, which boil from 158–163.5° and 163.5–167°.

Tetramethylbenzole.—Obtained from the distillate, which boils between 185–204°

Pentamethyl and Hexamethylbenzole.—Pentamethylbenzole is a liquid boiling at 203°, crystallizing in an ice mixture, and dissolving in concentrated sulphuric acid, thus forming a sulpho-acid. Hexamethylbenzole is a solid white, crystalline body, melting at 150°, and boiling at 260°. It is not soluble in concentrated sulphuric acid.

Comptes Rendus de l'Académie des Sciences.

Vol. LXXXIX, No. I, July 7th, 1879.

Abstractor, A. BOURGOUGNON.

A New Metal, discovered by TELLEF DAHL.—This new metal was found in a mineral containing kupfernickel and nickel glance, at Otero, and called Norwegium.

White ; malleable ; same hardness as copper, melting at a bright red heat ; sp. gr. = 9.44 ; not easily soluble in ClH, but readily in NO_3H, giving a blue solution, turning green by hydration ; also soluble in SO_4H_2. The oxide NgO, reduced by H, gives 9.60 and 10.15 per cent. of O, giving Ng = 145.95.

Reactions.—Solutions are precipitated by KHO — NH_3 — and Na_2Co_3. The precipitate is green, and soluble in an excess of reactif, with a blue coloration.

H_2S, in very acid solutions, produces a brown precipitate, insoluble in NH_4S. Easily reducible on charcoal with CO_3Na_2.

Commercial Trimethylamine, E. DUVILLIER and A. BUISINE.—Commercial trimethylamine is not a pure product, as advanced by M. Vincent. It contains only about 5 to 10 per cent. of trimethylamine, and 50 per cent. of dimethylamine ; also monomethylamine, monopropylamine and monoisobutylamine, in equal parts.

No. II, July 14, 1879.

Direct Combination of Cyanogen with Hydrogen and the Metals, M. BERTHELOT.—Equal volumes of hydrogen and cyanogen,

dry and pure, are heated in closed tubes for several hours, at a temperature of 500 to 550° C. At a lower temperature the combination is not complete, and at a higher temperature decomposition occurs, and nitrogen is liberated.

At 300° C., cyanogen combines with zinc, cadmium, iron, in a closed tube, without production of nitrogen. The reaction with zinc takes place at ordinary temperature, after a contact of some days, but only on the surface of the metal; at 100° C. the reaction takes place after three to four hours.

Copper and lead did not give any reaction at 100 or 300°, but at 500° a small quantity of cyanides was formed, with production of a carbonaceous substance and of nitrogen.

Silver and mercury did not give any reaction at low or high temperatures.

Organometallic Radicles of Tin, A. CAHOURS and DEMARÇAY.—Stanbutyl is produced by the action of iodide of isobutyl upon tin, in a closed flask heated for twenty-five days. Stanamyl is obtained by heating iodide of amyl with tin for twenty-five days, in a closed flask.

No. III, July 21st, 1879.

Researches upon Explosive Substances—Combustion of Gunpowder, NOBLE and ABEL.—In the first part of this memoir, the authors gave the proportion of hyposulphite of potassium produced by the explosion of gunpowder. This proportion varies with the several kinds of gunpowder employed, and is from 3 to 8.5 per cent. The second part of the memoir shows the quantity of heat developed during the explosion.

Experimental Research upon the Decomposition of Gun-cotton in Closed Vessels, SARRAU and VIEILLE.

COMPOSITION OF GUN-COTTON EMPLOYED.

Carbon	24.0
Nitrogen	12.7
Oxygen	55.6
Hydrogen	2.4
Saline residuum	2.4
Moisture	2.6

The gun-cotton was pulverulent, and the deflagration in a close vessel was obtained by means of a wire heated by an electric current.

The following results were obtained :

AVERAGE SP. GR. OF THE PRODUCTS OF DECOMPOSITION.	PRESSURE IN KILOGRAMMES, BY SQUARE CENTIMETERS.
0.10	1190
0.15	2200
0.20	3090
0.25	4676
0.30	5920
0.35	7730
0.45	9760
0.55	11840

COMPOSITION IN VOLUME OF THE GASEOUS PRODUCTS.

Sp. gr.	Pressure.	CO_2.	CO.	H.	N.
0.023	250	23.72	43.24	17.28	15.76
0.200	3090	28.68	37.61	18.95	14.85
0.300	5920	30.42	36.28	18.76	14.54

The decomposition of gun-cotton is represented by

$$C_{24}H_{10}O_{10}(NO_6H)_5 8CO_2 + 16CO + 7H + 5N + 8HO.$$

Transformation of Hydrocellulose into Friable Pyroxyls, A. GIRARD.—Hydrocellulose is a derivative of cellulose, and is transformed by nitrification into pyroxyls. Hydrocellulose, being friable, produces pyroxyls, having the same friability. The degree of nitrification of hydrocellulose is the same as for cellulose, and the pyroxyls of hydrocellulose have a composition similar to the hexanitric cellulose. When these pyroxyls are obtained, they are afterwards pulverized under water.

As long as these pyroxyls have not been powdered, they have the same characters as ordinary pyroxyls ; when powdered, they are similar to dynamite ; they only burn when brought in contact with fire, but explode by percussion.

Being friable, these pyroxyls are readily soluble in alcoholized ether, and used for the preparation of collodion.

Action of Boron Fluoride upon Acetone, F. LANDOLPH.—Acetone absorbs directly one equivalent of boron fluoride, giving a colored syruppous product. By fractional distillation three products have been separated :

1. Fluobor acetone α.—Boiling point, 120 to 123° C.; composition, $C_3H_6O,B_4Fl_3O_4H_3$.

2. Fluobor acetone β.—Easily crystallizes in white, bright needles, melting at 36° C.; boiling point, 90 to 92° C. Same composition as fluobor acetone α.

3. Boracetone.—The last term of the series of fluobor acetones, is liquid and very volatile; boiling point, 50° C.; composition, C_3H_6O, $Bo_2O_3H_2$

These combinations, when exposed to air, produce white fumes, very acid and irritating; they burn with a green flame, and are immediately decomposed when brought in contact with water, with formation of boric acid, and very volatile compounds of an agreeable odor. Sodium has an energetic action upon the fluorbor acetones α and β, producing sodium fluoride and gaseous products. They are also oxidized in a current of dry oxygen.

Iron Reduced by Hydrogen, H. MOISSAN.—Iron reduced by hydrogen is often very impure. Twelve samples were analyzed, and nearly all contained sulphur; in five samples arsenic was detected. These impurities came from the sulphuric acid and zinc employed in the preparation of hydrogen. Some samples also contained small quantities of silica, copper, and salts soluble in water.

In making iron reduced by hydrogen, if the current of gas is not dry and not rapid, and also if the temperature is not uniform, a mixture is finally obtained containing iron, protoxide of iron and magnetic oxide. Nearly all commercial iron reduced by hydrogen, has this composition.

No. 4, July 28, 1879.

On Chloral Hydrate, A. WURTZ.—When vapor of chloral hydrate and vapor of water are brought together in contact, in a space where these vapors cannot be condensed, no change in the temperature is observed.

Observations Relative to the Memoir of MM. Noble and Abel upon Explosive Matters, M. BERTHELOT.

Researches upon Samarium, a New Earth from Samarkite, LECOQ DE BOISBAUDRAN.—The bands given by the spectroscope are different from those furnished by the decipium:

1st. By the absence of the band 478.

2d. By the presence of strong blue bands, 480 and 463.5; the first very large, covering the band of the decipium 478.

3d. By the constant presence of the very strong band, 400.75.

Distillation of a Heterogeneous Liquid, L. TROUST.

Dissociation of Ammonium Sulphide, R. ENGEL and A. MOITESSIER.

Researches of Medicinal and Poisonous Substances in Saliva, A. GABRIEL POUCHET.—The salivation was produced by hypodermic injections of pilocarpine.

In three experiments lead was found, and in one case the patient had not had any contact with any compound of lead.

In the saliva of patients submitted to arsenical treatment, arsenic could not be found.

In diabetes, sugar could not be detected in the saliva.

In Bright's disease, albumen was present in the saliva.

Hypodermic injections of 0.01 gm of chloride of pilocarpine have produced 140 to 150 gms of saliva.

Palm Tree Wine from Laghouat (Algeria), M. BALLAND.—The composition of this wine is the following, sp. gr. 1.029 :

Water	83.80
Alcohol	4.38
Carbonic acid	0.22
Malic acid	0.54
Glycerine	1.64
Mannit	5.60
Grape sugar	0.20
Gum	3.30
Mineral substances	0.32
	100.00

No. 5, Aug. 4, 1879.

Remarks upon the Communication of A. Wurtz on Chloral Hydrate, M. BERTHELOT.—The results obtained by A. Wurtz are here discussed, and the rules to be observed in these kinds of experiments are given; several sources of error must be avoided. When the heat produced is small, it can sometimes not be observed, for a large amount of developed heat is lost by radiation.

Solid Hydride of Cyanogen, H. LESCŒUR and A. RIGAUT.—Hydrocyanic acid is spontaneously transformed into a black substance called azulmine, but the circumstances of the production and the constitution of the azulmic products are far from being perfectly known.

A. Gautier has shown that pure hydrocyanic acid can be kept indefinitely, but is altered in the presence of water and cyanhydrate of ammonia.

A trace of potassium cyanide without water, transforms hydrocyanic acid rapidly into azulmine; after twenty hours this acid becomes dark, and solidifies after six days. The black mass is generally amorphous, but often contains transparent crystals, soluble in ether or benzine, alterable when exposed to air, soluble in alcohol and boiling water, having a bitter taste. The aqueous solution after standing gives a brown deposit, and gives with bichloride of platinum, a green coloration.

The crystals contain :

	Theory		I	II
C_2	12	44.44	43.96	.....
H	1	3.70	3.80	.....
N	14	51.86	.....	51.13
	27	100.00		

corresponding to $(C_2NH)_3$.

On the Non-existence of the Soluble Alcoholic Ferment, D. Cochin.—A letter to M. Dumas where the experiments are not related.

On the Coloring Matter of the Palmella Cruenta, T. L. Phipson.—A new, red coloring matter, called by the author palmelline, extracted from a small alga, growing on the lower portion of damp walls whitewashed with lime, similar in color to the hæmoglobine of blood. Insoluble in alcohol, ether, benzine, carbon disulphide, but soluble in water. Palmelline produces bands of absorption similar to those produced by blood, but these do not exactly occupy the same position. It is formed of a red matter containing iron united to albumen, and easily ferments, giving off a strong ammoniacal odor.

No. 6, Aug. 11, 1879.

Upon the Acids Produced when the Crude Acids formed by the Saponification of Neutral Fatty Matter, are Distilled by Superheated Steam, A. Cahours and E. Demarçay.—By this method hydrocarburetted products and acids are obtained, the hydrocarbons belonging to the series of the marsh gas.

The following acids have been separated : Valeric acid, caproic acid, enanthylic acid and caprylic acid.

Answer to M. Berthelot upon the Communication Relative to Chloral Hydrate, A. Wurtz.—In this note the author maintains his results as given in his first communication.

Synthesis of Phenoleglucoside and Orthoformylglucoside or Hellicine, A. Michael.

Report on Foreign and American Patents relating to Chemistry.

Foreign Patents.

Condensed from R. BIEDERMANN's Report to the German Chemical Society, by H. ENDEMANN.

HENRY BRUNNER, Appleton, Widnes: *Innovations regarding the manufacture of alkali.* (Engl. P., No. 3166, Aug. 10, 1878.)—The inventor proposes, in order to prevent the formation of cyanides, to heat the mixture of sulphate of soda and lime, with from 25 to 75 per cent. of the quantity of carbon required for the complete reduction, until the mass melts, and to add the rest of the carbon at the end of the operation.

AUG. BEHNE, Harburg: (Germ. P., No. 6046, Dec. 3, 1878.)—*Pans for the concentration of brine*, combined with drying apparatus, and mechanical arrangement to remove the salt crystals from the solution.

CHARLES DE LA ROCHE, Paris: *Method to remove calcium carbonate from phosphorite.* (Germ. P., No. 6515, Jan. 19, 1879.)—The phosphorite is calcined in a shaft furnace, while steam is injected. The caustic lime thus formed is extracted with dilute acids. The method is used for the manufacture of high grade superphosphates.

WILL. THORNE, Montpellier: *Lead-lined sheet copper and iron.* (Germ. P., No. 5966, Oct. 13, 1878.)—The lead is applied to the previously tinned sheet iron or copper. A lead-tin alloy, which is formed, thoroughly unites the outer layer of lead with the other metal.

GEORGE BOWER and ALB. SPENCER BOWER, St. Neots: *Method to protect iron or steel against rust.* (Engl. P., No. 1280, Apl. 1, 1878; Germ. P., No. 5339, Oct. 8, 1878.)—The inventors use magnetic oxide as a protector. In order to produce this, carbon dioxide is allowed to act on the metallic surface of these goods, at high temperature; or carbon monoxide on the surface of the goods, previously oxidized to sesquioxide.

S. GILCHRIST THOMAS, Battersea: *Liquid glass for the production of a mass used for lining stoves.* (Germ. P., No. 6080, Mar. 26, 1878; compare Germ. P., No. 5869.)—A mixture of pure ground quick-lime, with from 5 to 10 per cent. of liquid glass, 1.5 spec. gravity; or one consisting of 80 to 85 quick-lime, 5 liquid glass and 10 parts clay or blast-furnace slag, are pressed into moulds.

JOHN COWDERY MARTIN, Richmond: *Drying white lead.* (Engl. P., No. 2998, July 29, 1878.)

CARL KURTZ, Cologne: *Method and apparatus for the manufacture of nitro-glycerine.* (Germ. P., No. 6208, Dec. 24, 1878.)—The glycerine is pressed from below into the acid mixture, which it enters in minute currents. To complete the intimate mixture, currents of air are blown into the fluid. The ready formed nitro-glycerine is continually drawn from the surface, and washed by allowing it to pass through a series of water vats, where a more thorough mixture, for the purpose of washing, is likewise obtained by blowing air into the

fluid. The washed nitro-glycerine is likewise continually drawn from the bottom of the last vat.

ELISÉE COLTE: *Explosives.* (Engl. P., No. 3119, Aug. 7, 1878.)—The raw material for the preparation of explosives by this patent, is rye straw. Treatment with soda removes the fat, and produces disintegration of the fibres. These are then mechanically reduced to a pulp, washed, and formed into paper, which is cut into small pieces of 3 square millimeters surface. These are converted into nitro-cellulose. The nitro-cellulose pieces thus produced, are soaked in solutions of nitre containing dextrine or charcoal powder, in varying proportions, depending on the kind of explosive sought to be manufactured. Moist nitro-cellulose may be ground with 2 per cent. of soda, and then be mixed with 50 per cent. of nitro-glycerine; this mixture is called "palein;" it is said to possess superior stability, and to be an exceedingly energetic explosive.

HOYER and STADELMANN, Dresden: *Carburetting illuminating gas.* (Germ. P., No. 4723, Aug. 2, 1878.)—This is sought to be reached by means of benzine.

PRZYBRAM and Co., Vienna: *Method for the manufacture of violet and blue dyestuffs from mono and biamdo, and mono and binitro anthrachinone respectively.* (Germ. P., No. 6926, July 2, 1878.)—The substances named are heated with Nordhausen oil of vitriol, containing 40 per cent. anhydride. Thus dyestuffs and, on continued treatment, their sulfo-acids are formed.

G. H. E. BERING, Bromberg: (Germ. P., No. 6202, Oct. 26, 1878.)—*Varnish for piperhangings.* Casein dissolved in sodium tungstate.

J. J HOLTZ, Berlin: *Phenolith.* (Germ. P., No. 6498, Aug. 17, 1878.)—Mixture of phenole with boric acid and various salts, to be used as an antiseptic or preservative for meat, hides, &c.

H. A. CLARK, West Cowes: *Composition for covering the bottom of ships.* (Engl. P., No. 2976, July 26, 1878.)—This consists of 1 blue vitriol, 1 white lead, 1 green verditer, 10 rosin, ½ boiled oil, 1 rouge, 1 graphite, ½ turpentine, 1 Swedish tar, 1 copper blue.

JOHN SCHWARTZ, Stepney: (Engl. P., No. 3163, Aug. 10, 1878.)—Proposes to remove potash salts from molasses, by converting them into sulphates (?)

American Patents.

Condensed from the Official Gazette of the **U. S. Patent Office**, by ARNO BEHR.

September 2, 1879.

219,097.—*Alloys for jewelry.* WM. WHEELER HUBBELL.

66.7% gold, 10% silver, 23.3% copper.

219,168.—*Process for preserving meat.* AZEL S. LYMAN.

The meat is placed in a closed vessel, and cooked with steam under high pressure. In slowly reducing the pressure, by letting the steam escape, volatile substances are carried away which give to the meat an objectionable taste and smell. The meat is, after this treatment, enclosed in tight packages.

219,187.—*Liquid fuels.* HERBERT R. SMITH.

Consists of a mixture of finely pulverized coal with a liquid hydrocarbon, which the inventor proposes to blow into the furnace in the form of spray.

219,265.—*Alloy metals of metric silver coin and silverware.* WM. H. HUBBELL.

89.58% silver, 0.42% gold, 10.00% copper.

219,287.—*Process of obtaining sugar from the juice of beet-root and other saccharine liquids.* CARL LOEWIG.

The process of defecating and clarifying beet-root juice by means of gelatinous hydrate of alumina.

Reissue 8,882.—*Manufacture of sulphate of alumina.* F. LAUR.

Into the nearly neutral solution of sulphate of alumina, pieces of zinc are introduced, by which the iron present in the solution is reduced to the state of protoxide.

September 9, 1879.

219,378.—*Ozone apparatus.* F. W. BARTLETT.

Ozone is generated by means of phosphorus in a peculiarly constructed apparatus.

219,410.—*Manufacture of iron.* EDWIN PETTITT.

Proposes to convert cast iron into wrought iron, by blowing finely powdered glass or slag through the molten metal.

219,455.—*Lubricants.* SAMUEL FRAZER.

Is a mixture of four different grades of rosin-oil—according to a previous patent of the same inventor—with lime, water and sal-soda.

219,519.—*Process of dephosphorizing iron and steel.* JACOB REESE.

Finely divided lime, or carbonate of lime, is injected into the molten metal.

219,538.—*Soap.* ALANSON SMITH.

Ingredients: Tallow, rosin, lye, sal-soda, borax, alcohol, benzine, turpentine, ammonia and sassafras.

Reissue 8,887.—*Manufacture of ornamental buttons from blood and other materials.* WM. F. NILES. Reissue of patent 217,705.

September 16, 1879.

219,637.—*Manufacture of chromates of potash and soda.* CHAS. S. GORMAN.

The melting is done in two operations; first, lime and a certain portion of carbonate of potassium being added, then, after cooling, the remainder of the carbonate is added, while the charge is kept at a moderate temperature.

219,657.—*Compounds for enameling wood.* JOHN C. SCHMIDT.

White lead mixed in a solution of shellac in alcohol.

219,667.—*Manufacture of albumen from fish-spawn.* TOLF OSCAR ALSING.

The claim gives no idea how the inventor proposes to carry out his process.

219,694.—*Electrical apparatus for regulating temperature.* ROY O. CROWLEY.

An apparatus, the description of which cannot here be given, devised for keeping a liquid at a uniform temperature automatically.

219,725.—*Process for preserving meat.* FRANZ HOFMANN.

Meat is treated with a certain quantity of salt, and exposed to a current of air of 50–60° C., impregnated with the vapor of carbon bisulphide. Then it is dried in a current of air heated from 90–100° C., and finally pulverized.

219,742.—*Incrustation preventatives.* FREDERICK LEPORIN.

Alcohol, oil of black pepper, quinine, bromide of potassium, cutch, water and salt.

Reissues 8,897 and 8,898.—*Lubricants.* ANNA R. LIPPINCOTT.

Mixtures of petroleum with pine-tar, or with some heavy hydrocarbon oil or fat.

September 23, 1879.

219,807.—*Coating metals with platinum.* JEAN B. A. DODÉ.

The process consists—first, in brushing over the article of metal with spirits of turpentine; secondly, in coating the article with a layer composed of a mixture of borate of lead and oxide of copper, and drying the same in an oven; thirdly, in dipping the article thus prepared in a composition of borate of lead, German litharge, platinum chloride, ether, oil of lavender and amylic alcohol, and afterwards heating the article.

219,874.—*Process and apparatus for evaporating saline solutions.* PAUL PICCARD.

Claim: first, the continuous process of evaporating saline solutions, consisting in heating the same in a closed boiler under pressure, then conducting it from said boiler into a closed evaporator, in which it is relieved from pressure, and finally returning it to the boiler through closed conductors.

220,005.—*Manufacture of sulphate of lime.* ZENAS C. WARREN.

Proposes to manufacture sulphate of lime of the same density as paper pulp, by bringing milk of lime and dilute sulphuric acid together in thin sheets, and in the right proportion.

September 30, 1879.

220,023.—*Mauufacturing malt liquors.* HENRY M. HARTSHORN.

In patent 218,020, the same inventor described a process for the production of glucose from corn. He now claims the product of this process in combination with malt-wort, for the manufacture of beer.

220,103.—*Compounds for preserving organic bodies.* JEAN WICKERSHEIMER.

Glycerine, methylic alcohol and a solution of alum, salt, nitre, potash and arsenious acid.

220,116.—*Process of extracting oil from the residuum in the manufacture of glucose.* ARNO BEHR and H. C. HUMPHREY.

In the manufacture of glucose directly from corn, by treatment with acids, or by the diastase process, the insoluble residue contains all, or nearly all, the fatty matter of the corn. The patent is for recovering it from this residue by means of solvents.

220,121.—*Antiseptic compounds.* MAX BURCHARDT.

Peat, sulphate of iron, coke and coal-tar.

220,148.—*Manufacture of aluminium.* JAMES S. HOWARD.

According to this patent, aluminium is produced by heating in a crucible a mixture of alum and carbonate of soda, together with charcoal and salt.

220,148.—*Manufacture of alloys of aluminium.* JAMES S. HOWARD.

A mixture of alum and carbonate of soda is introduced into the molten metal, to which the aluminium is to be alloyed.

220,150.—*Manufacture of glucose.* HENRY C. HUMPHREY.

The patent is for the use of oxalic acid in the manufacture of a sweet and light colored syrup, directly from corn.

XXVI.—PROCEEDINGS.

Regular Meeting, October 2, 1879.

The meeting was called to order at 8 P. M., Vice-President Squibb in the chair. The minutes of the previous meeting were read and adopted.

The report of the Committee upon a Plan for the Selection of Officers, was read by Dr. Squibb, and after an explanation by Dr. Alsberg, was, on motion, adopted.

To the American Chemical Society:

Your Committee, appointed at the last meeting, to prepare a plan for conducting the annual election of the Society, whereby distant members may have a better opportunity for being represented, begs leave to submit the following report:

By the Constitution the officers annually elected are:

A President,

Six Vice-Presidents—three of whom must reside within thirty miles of New York City;

A Corresponding Secretary,
A Recording Secretary,
A Treasurer,
A Librarian,
Three Curators,

and a Board of thirteen Directors, which Board must embrace three Vice-Presidents, the Corresponding Secretary, the Recording Secretary and the Treasurer, and may embrace any other officers of the Society if elected to it. It should embrace, for obvious reasons, the Librarian and one member of the Committee on Papers and Publications.

Two Committees are also to be annually elected—

A Committee on Papers and Publications, consisting of three members; and

A Committee on Nominations for Membership, consisting of five members.

At the annual elections, a majority of the votes cast is necessary to an election, and any absent member may vote by a ballot subscribed with his name.

The course hitherto followed has been for the Chairman of the meeting next preceding the annual meeting, to appoint a Committee to prepare a ballot for the offices and committees, and send this to every member, with the request that each may erase and supply names according to his judgment or desire, sign the completed ballot, and return it in time for the election. The general result of this plan has been that a large number of the ballots are not returned at all, and that of those returned a very few have been altered, so that the elections have been nearly unanimous. But another result of late has been a few expressions of dissatisfaction with the plan, on account of undue weight given to the central or local membership, and, hence, this Committee was appointed to propose some plan that might obviate the objections made by non-resident members.

Your Committee has discussed various plans without finding one that is free from serious difficulties, or that is likely to satisfy the entire membership.

The Charter Law requires that seven members of the thirteen Directors shall be residents of the State of New York, and that a majority of the Board shall be present to constitute a quorum, and it makes the Board of Directors pecuniarily liable for the debts and the management of the Society.

The welfare and usefulness of the Society requires that the two Secretaries, the Treasurer, the Librarian, the Curators, the Board of Directors and the two Committees, should consist of members living near the place of meeting, and having the time, ability and the inclination, necessary to carry on its affairs ; and these affairs involve a very considerable amount of important labor and self-sacrifice. And thus far these offices are not positions of either honor or emolument. These offices must be local, and the filling of them must devolve mainly on the local membership. And with all the care that could be taken, they have not always been successfully filled. When successfully filled—and the Society has had many faithful officers—it is manifestly to the interest of the Society and its work, to continue the successful selections year after year, if the officers can be induced to continue to serve ; first, because a well-tried, successful officer is better than an untried one ; second, because an officer who has done the work well, does it better and more easily than a new one ; third, because the number of members who can and will do the work well, is very small, and the selection very difficult ; fourth, because several of these officers must be members of the Board of Directors, and are, therefore, pecuniarily liable, and few outside of the local membership have been found willing to accept the responsibility, because they cannot be present to know or to control the acts for which they become responsible.

In addition to its other work, and of more importance to non-resident members, perhaps, than any other work, the Society now has a Journal which, if moderately well conducted, must certainly be worth to every member the full amount of his annual dues. How important is it then that the officers of the Society should be energetic, prompt and laborious, in their part of the work of this Journal ; and that the Committee in charge of it should be equally active and energetic in collecting the other material necessary to its greatest utility. And who better than some committee from the local membership, could select and offer to the suffrage of the total membership, the proper persons for these offices and committees. And if over-worked, or lukewarm, or selfish members were put into these places, how rapidly must the Society deteriorate, and how soon would it begin to lose, rather than gain, in its value to its distant members.

On the other hand, the offices of President and Vice-Presidents are mainly honorary, and involve no labor that cannot easily be

given by any one. Hence, these officers should be selected from those members whose public work and influence has been most important to the ultimate and general objects of the Society. Every member has not only an equal interest in, but also an equal knowledge of the question, as to who might best fill these posts of honor; and, therefore, the widest freedom of choice is desirable here, with the least possible room given for local prejudices. In short, these offices are as independent of locality as the other group is dependent.

In view of these considerations, your Committee proposes that at this October meeting, the members present nominate at large nine persons who would be competent to form a proper nominating committee, and who would attend to the duties of selecting proper officers of the Society. Then, that from these nine names, each written on a slip of paper and placed in the ballot box, the presiding officer should draw by chance three, and that these three should constitute the Nominating Committee to prepare a ballot or ticket, and present it complete at the November meeting, to be then approved or modified by the Society.

This ballot or ticket should be prepared, as follows: It should first have blank spaces for a President and six Vice-Presidents, so that each member could fill them up with his own choice of candidates.

Next it should name a carefully selected candidate for each of the other offices, having ascertained that such candidate would consent to serve.

Next, as it is proposed that not only the three Vice-Presidents, the two Secretaries and the Treasurer, should be upon the Board of Directors, but also the Librarian, and some one member of the Committee on Papers and Publications, making eight ex-officio members of the Board, five other names should be selected and presented.

Next, three names should be selected for the very important Committee on Papers and Publications, and one of these names should be placed in the Board of Directors.

Next, five names should be selected and presented for the hardly less important Committee on Nominations for Membership in the Society.

At the foot of this ballot or ticket should be placed, first, the following sentence:

"As a majority of the votes cast are necessary to an election, and as the names on the above ticket may fail of being elected by this ballot, and render a new election necessary from those names having the highest number of votes, I hereby appoint ——— ———, as my proxy, to vote in my stead at such new election, and if said proxy fails to be present, or to vote in my place, I agree that my ballot should be withdrawn and not counted."

Then should follow a place for the member's signature.

Then the following note should be appended:

"Members will please fill the blank spaces under the heads for President and Vice-Presidents, being careful to select such names as will be likely to be so generally appreciated as to be selected by other members, for unless there be some partial agreement on candidates, election by this plan is impossible.

"In selecting candidates for Vice-Presidents, three must reside in or near New York City.

"If the names of any of the candidates presented here be objected to, let them be crossed off, and others substituted.

"Please notice well that if no proxy be named, or none be present, this ballot will have no effect, should a second voting be necessary to an election.

"If a majority be not secured on counting the ballots sent in, this balloting will have the effect of an open nomination by the Society at large, and the two candidates for each office which had the highest number of votes on the first ballot, will be presented for a new election, and one or the other will be elected by the members and proxies present at the annual meeting.

"Members should fill up and sign this ballot at once, and mail it in the stamped and addressed envelope sent herewith for the purpose."

All of which is respectfully submitted.

M. ALSBERG,
P. CASAMAJOR,
E. R. SQUIBB, Chairman. } *Committee.*

The following gentlemen were then nominated to serve on the Committee for the Selection of Officers, in accordance with the plan proposed in the foregoing report: Messrs. Behr, Endemann, Squibb, Casamajor, Leeds, Goldschmidt, Alsberg, Goldmark and Waller; from which Vice-President Leeds selected by lot Messrs. Goldschmidt, Goldmark and Endemann, as members of such Committee.

The resignations of Messrs. Ashburner and Cornwall were read and accepted.

Messrs. Thomas Harmer, C. Tessié du Motay, and ——— Giesecke, were elected members.

The following gentlemen were proposed as members: Wm. J. Oothout, proposed by C. A. Doremus, seconded by Messrs. Bourgougnon and Rossi; Henry Doscher, proposed by F. A. Grund, seconded by Messrs. Alsberg and Behr; and Henry C. Iness, proposed by Bruno Terne, seconded by Messrs. Alsberg and Behr.

Dr. Squibb then presented to the collection of the Society, in the name of Prof. J. W. Mallet: 1. A specimen of Heptane, a liquid hydrocarbon, first described by Mr. T. Wenzell, of San Francisco, as a product of distillation from the exudation of the *Pineus Sabiniana*, under the name abietine. This liquid was recently the subject of an admirable and exhaustive paper by Prof. Thorpe, published in the *Journal of the London Chem. Soc.*, for June, 1879, pp. 296 *et seq.* In this paper, the very interesting chemical character of this liquid was first shown. 2. Three interesting specimens of Chinese galls, some of which have found their way into use, and become articles of commerce. All are described in recent notes on such articles.

Mr. Jas. H. Stebbins, Jr., then read his paper on "A New Sulphur Urea Compound."

Dr. Endemann then read, in full, Prof. Goessmann's papers entitled: 1. "Sugar in Corn Stalks and Melons." 2. "Report on Field Experiments with Sugar Cane in Louisiana." 3. "Analyses of Intestinal Concretions." By title: 4. "Contributions to the Chemistry of Fruit Culture."

After which Prof. Leeds gave abstracts of his papers, entitled: 1. "Comparative Results Obtained with Electrical Ozonisers, with Description of a Modified Form." 2. "Re-examination of Chemical Methods Proposed for the Generation of Ozone." 3. "Non-production of Ozone in the Crystallization of Iodic Acid." 4. "Action of Ozone upon Organic Substances."

Mr. Bourgougnon gave a description of a recent patent of Tessié du Motay, for bleaching ostrich feathers, by dipping them into turpentine, and then exposing to the air.

After which, upon motion, the Society adjourned.

S. A. GOLDSCHMIDT,
Recording Secretary.

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